

WHAT IS CLAIMED IS:

1. A test method for testing a device under test (DUT), the method comprising the steps of:

outputting an expected test pattern corresponding to the DUT, the
5 expected test pattern having a test input signal and an expected output signal;

compressing the expected test pattern and outputting an expected
compressed pattern having an expected compressed output signal
corresponding to the expected output signal;

saving the expected compressed pattern;

10 acquiring and decompressing the expected compressed pattern, and
then outputting the test input signal to test the DUT;

receiving and compressing a real output signal output from the DUT,
and then outputting a real compressed output signal;

saving the real compressed output signal; and

15 judging whether or not the real compressed output signal and the
expected compressed output signal are the same.

2. The test method according to claim 1, wherein the output expected test
pattern is a scan test pattern.

3. The test method according to claim 1, wherein the method is applied to a test system comprising:

an automatic test pattern generator (ATPG) for generating and outputting the expected test pattern.

5 4. The test method according to claim 3, wherein the test system further comprises:

a compressor for receiving and compressing the expected test pattern, and then outputting the expected compressed pattern.

10 5. The test method according to claim 4, wherein the test system further comprises:

an automatic test equipment (ATE) including a memory for saving the expected compressed pattern and the real compressed output signal, the ATE judging whether or not the real compressed output signal and the expected compressed output signal are the same.

15 6. The test method according to claim 5, wherein the test system further comprises:

a loadboard on which the DUT is placed, the loadboard having a compressing/decompressing unit for acquiring and decompressing the expected compressed pattern, outputting the test input signal to test the DUT,

compressing the real output signal, which is output after the DUT is tested, into the real compressed output signal, and saving the real compressed output signal into the memory.

7. The test method according to claim 1, wherein:

5 when the real compressed output signal and the expected compressed output signal are the same, it is judged that the DUT is passed; and

when the real compressed output signal and the expected compressed output signal are different, it is judged that the device under test is failed.

8. A test system for testing a device under test (DUT), the system
10 comprising:

an automatic test pattern generator for generating and outputting an expected test pattern corresponding to the DUT, the expected test pattern having a test input signal and an expected output signal.

a compressor for receiving and compressing the expected test pattern,
15 and then outputting an expected compressed pattern having an expected compressed output signal corresponding to the expected output signal;

an automatic test equipment for saving the expected compressed pattern and a real compressed output signal, and comparing the real compressed output signal to the expected compressed output signal; and

a compressing/decompressing unit for acquiring and decompressing the expected compressed pattern of the automatic test equipment, testing the DUT using the test input signal, outputting a real output signal, and compressing the real output signal into the real compressed output signal.

- 5 9. The test system according to claim 8, wherein the automatic test equipment comprises:

a memory for saving the expected compressed pattern and the real compressed output signal.

10. The test system according to claim 8, further comprising:

- 10 a loadboard on which the DUT is placed, the loadboard having the compressing/decompressing unit.

11. The test system according to claim 8, wherein the expected test pattern generated by the automatic test pattern generator is a scan test pattern.